

Claims

- [c1] What is claimed is:
- 1.A method for displaying a bottom-hole assembly (BHA) using vector graphics, comprising:
parsing and interpreting BHA source data to produce data packets corresponding to BHA components;
assembling the BHA using vector graphics components in a vector graphics library, wherein the vector graphics components represent the BHA components; and
displaying the BHA at a selected scale.
 - [c2] 2.The method of claim 1, wherein the BHA source data are in a WITSML data file or a text file.
 - [c3] 3.The method of claim 1, wherein the displaying further displays the BHA source data.
 - [c4] 4.The method of claim 3, wherein the displayed BHA source data and the displayed BHA are in separate windows.
 - [c5] 5.The method of claim 1, wherein the parsing and the interpreting the BHA source data further produce data corresponding to well log data, and the displaying further displays the data corresponding to the well log data.

- [c6] 6.The method of claim 5, wherein the well log data comprise at least one selected from the group consisting of a weight on bit, a rate of rotation, a rate of penetration, torques experienced by the BHA, drags experience by the BHA, shocks experienced by the BHA, and stresses associated with the BHA components.
- [c7] 7.The method of claim 5, wherein the well log data comprise at least one selected from the group consisting of gamma ray data, nuclear magnetic resonance data, formation resistivity data, formation porosity data, and formation type data.
- [c8] 8.The method of claim 1, wherein the displaying further comprises displaying data corresponding to well log data, wherein the well log data are not included in the BHA source data.
- [c9] 9.The method of claim 8, wherein the well log data comprise at least one selected from the group consisting of a weight on bit, a rate of rotation, a rate of penetration, torques experienced by the BHA, drags experience by the BHA, shocks experienced by the BHA, and stresses associated with the BHA components.
- [c10] 10. The method of claim 8, wherein the well log data comprise at least one selected from the group consisting

of gamma ray data, nuclear magnetic resonance data, formation resistivity data, formation porosity data, and formation type data.

- [c11] 11. The method of claim 1, further comprising animating the displayed BHA.
- [c12] 12. The method of claim 12, wherein the animating is based on information related to a well trajectory or time-versus-depth data.
- [c13] 13. The method of claim 13, wherein the information is included in the BHA source data.
- [c14] 14. The method of claim 13, wherein the information is not included in the BHA source data.
- [c15] 15. The method of claim 15, wherein the information is streamed from a well logging operation.
- [c16] 16. The method of claim 1, wherein the parsing and the interpreting the BHA source data further produce data packets corresponding to a drill string that is attached to the BHA, wherein the assembling further comprises assembling the drill string using vector graphics components that represent drill string components, and wherein the displaying further displays the drill string.
- [c17] 17. The method of claim 16, further comprising animat-

ing the displayed drill string and BHA.

- [c18] 18. The method of claim 17, wherein the animating is based on information related to a well trajectory or time-versus-depth data.
- [c19] 19. The method of claim 18, wherein the information is included in the BHA source data.
- [c20] 20. The method of claim 18, wherein the information is not included in the BHA source data.
- [c21] 21. The method of claim 20, wherein the information is streamed from a drilling operation.
- [c22] 22. The method of claim 18, wherein the animating further displays data related to one selected from formation data, borehole data, and BHA data.
- [c23] 23. The method of claim 22, wherein the data selected from the formation data, the borehole data, and the BHA data is streamed from a drilling operation.
- [c24] 24. The method of claim 1, further comprising displaying a borehole surrounding the BHA.
- [c25] 25. The method of claim 24, further comprising animating the displayed BHA along the borehole.
- [c26] 26. The method of claim 24, wherein the borehole is dis-

played as cylinder sections.

[c27] 27. The method of claim 26, the cylinder sections of the borehole are displayed in sequence to simulate a drilling process.

[c28] 28. The method of claim 27, further comprising animating the displayed BHA to simulate the drilling process.

[c29] 29. A system for displaying a bottom-hole assembly (BHA) using vector graphics, comprising a processor and a memory, wherein the memory stores a program having instructions for:

parsing and interpreting BHA source data to produce data packets corresponding to BHA components;
assembling the BHA using vector graphics components in a vector graphics library, wherein the vector graphics components represent the BHA components; and
displaying the BHA at a selected scale.